REMARKS/ARGUMENTS

All prior Claims have been canceled.

Twelve new Claims – Claims 35-46 – have been introduced with this Request for Continued Examination.

Since in the prior office action all independent claims (Claims 13 and 27-28) had been rejected under 35 U.S.C. §103(a) over the combination of Shibata et al. (US 2002/0089664) and Park (US 6,432,800), the Applicant provides the following remarks demonstrating non-obviousness of the present set of independent claims (Claims 35, 38, 41, and 44) over Shibata and Park.

This invention involves SAW segment indices and image segment indices being rearranged for consequent image captures and being repeated only after a certain number (greater than one) of captures.

For an obviousness rejection to be proper, the Patent Office must meet the burden of establishing a prima facie case of obviousness. The Patent Office must meet the burden of establishing that all elements of the invention are disclosed in the cited publications, which must have a suggestion, teaching or motivation for one of ordinary skill in the art to modify a reference or combined references.[1] The cited publications should explicitly provide a reasonable expectation of success, determined from the position of one of ordinary skill in the art at the time the invention was made.[2]

From the final office action and the advisory office action, it is clear that the examiner is confused by the claims. For example, the Examiner just cannot see the distinction between dividing the SAW (stepper area window) into SAW segments and dividing a die into plurality of segments, perhaps because SAWs are residing on the

[1] In re Lee, 277 F.3d 1338, 61 U.S.P.Q.2d 1430 (Fed. Cir. 2002).
[2] In re Fine, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988); In re Wilson, 165 U.S.P.Q. 494, 496 (C.C.P.A. 1970); Amgen v. Chugai Pharmaceuticals Co., 18 U.S.P.Q.2d, 1016, 1023 (Fed. Cir. 1996).

wafer and are defined with respect to the wafer; however, the actual division occurs within the processing unit and requires only the knowledge of the mask's dimensions what's going on the wafer is irrelevant for this step.

What Shibata, the primary publication relied upon by the Examiner, does not teach is the area covered by the image field segments within the image field of the camera having different image dimensions than the images of the mask on the wafer within the image field of the camera.

Shibata also does not teach image field segments within at least some images representing SAW segments of adjacent images of the mask on the wafer.

Claims 3-16 and 27-34 are pending in this application.

Claims 27, 28, 31, and 32 have been amended.

Claims 3-16 and 27-34 had been rejected.

Claims 27, 28, and 32 have been changed, as suggested by Examiner, to correct minor editorial errors; no new matter has been added.

Claim 31 had been rejected under 35 U.S.C. §112, second paragraph. Applicant believes that the Claims as amended are now in compliance with 35 U.S.C. §112, second paragraph.

Claims 3, 5, 8, 11, 13, 15, 27, 28, and 34 had been rejected under 35 U.S.C. §103(a) over the combination of Shibata et al. (US 2002/0089664) and Park (US 6,432,800). This rejection is respectfully traversed for the following reasons.

Shibata teaches that "invention acquires the image of the sample that has high contrast both in large and fine pattern parts by using an optical system for coaxial bright field epi-illumination, forming the optical image of the sample with various transmission ratio of 0-th order diffracted light that is reflected regularly from the sample, and capturing the image by an image sensor. Further, it is possible to set optical conditioning

automatically and in a short time by detecting a plurality of optical images of the sample under various conditions for the transmission ratio of the 0-th order diffracted light, evaluating quality of the detected images, and determining the transmission ratio of the 0-th order diffracted light showing the maximum defect detection sensitivity" (abstract of Shibata).

The present invention as defined by Claims 27 and 28 is patentable over Shibata because Shibata does not disclose, teach or suggest "initializing in a learning phase an image field of a camera, wherein the image field of the camera is divided by way of an interactive control system into a plurality SAW image field segments in such a way that after a definable interval of acquired image fields a repetition of an identical allocation of imaged SAW image field segments occurs; allocating the logical SAW segments to image field segments, in such a way that as the camera travels over the wafer an identical allocation of logical SAW segments to image field segments occurs at a definable travel interval and image interval; moving the camera with the image flied relative to the wafer and thereby acquiring a plurality of images wherein the plurality of images cover the entire wafer" as the present invention claims in Claims 27 and 28.

There is no doubt that each SAW shows the same content (information content). The whole surface of a wafer is covered with the SAWs. A practicable method to analyze the surface of a wafer is compare images from different location of the wafer with each other in order to locate any defects. A camera, having a field of view (Image field) captures images of a portion of the wafer surface. The problem is to define the field of the camera in such a way that after several images the image content is identical.

The field of view of the camera is smaller then a SAW. Therefore it makes sense to divide the SAWs into a plurality of logical SAW segments. Examiner states that the disclosure on paragraph 0039, line 4 of Shibata is identical with the division each SAW in a plurality of logical SAW segments. Applicant respectfully disagrees. Paragraph 0039 is dealing with the pattern density in the segments in order to achieve certain conditions for the 0-th order diffraction. The segmentation suggested by Shibata has nothing to do

with the segmentation in order to achieve the same image content after a certain number of captured image fields.

Shibata does not show the allocation of logical SAW-segments to the image field segments. The section of Shibata mentioned by the Examiner simply shows a DIE which has a peripheral section (2a1), a memory section (2a3) and a logic section (2a2). The allocation of logical SAW-segments does not consider the individual layout of the DIE / SAW. The segmentation of the present invention is carried out with the goal to achieve after a specific number of images a repetition of the image content.

Paragraph 0023 of Shibata clearly states the adjacent chips are compared with each other. This is not the case with the present invention. The present invention compares image field segments which have that same content.

A person skilled in the art would not consider Shibata as the closest prior art, because Shibata does not provide an efficient method for the analysis of wafers that performs comparisons using optical images while taking into account the fact that the size of the SAWs varies greatly depending on the stepper and the die size (design). In general, it cannot be assumed that one SAW can be imaged with one camera image.

Park teaches moving camera over a wafer but does not disclose, teach or suggest moving camera "as the camera travels over the wafer an identical allocation of logical SAW segments to image field segments". For these reasons the combination of Shibata and Park doesn't teach all features of the present invention.

Park does not provide any additional information which would motivate a skilled person to arrive at subject matter of the present invention. Park uses a method to inspect the circumference of a semiconductor wafer. A skilled person would not consider Park, since there is no generation of an image of the entire surface of a wafer.

The above-presented argument supports patentability of Claims 3, 5, 8, 11, 13, 15, 27, 28, and 34 under 35 U.S.C. §103(a) over the combination of Shibata et al. (US

2002/0089664) and Park (US 6,432,800). Allowance of the referenced Claims is respectfully solicited.

Claim 4 had been rejected under 35 U.S.C. §103(a) over the combination of Shibata and Park, and further in view of Kuwabara (US 6,643,394). Claims 6, 12, and 16 had been rejected under 35 U.S.C. §103(a) over the combination of Shibata and Park, and further in view of Yonezawa (US 6,222,624). Claim 7 had been rejected under 35 U.S.C. §103(a) over the combination of Shibata and Park, and further in view of Bishop et al. (US 5,119,434). Claim 9 had been rejected under 35 U.S.C. §103(a) over the combination of Shibata and Park, and further in view of Park. Claims 10, 29, and 33 had been rejected under 35 U.S.C. §103(a) over the combination of Shibata and Park, and further in view of Lin et al. (US 6,292,260). Claims 14 and 31 had been rejected under 35 U.S.C. §103(a) over the combination of Shibata and Park, and further in view of Kuwabara and Ramakrishna et al. ("File Organization…", ACM Transactions on Database Systems). Claims 30 and 32 had been rejected under 35 U.S.C. §103(a) over the combination of Shibata and Park, and further in view of common knowledge in the art as evidenced by Addlego (US 5,917,588).

These rejections are respectfully traversed for the following reasons.

If an independent claim is nonobvious under 35 U.S.C. §103, then any claim depending therefrom is nonobvious.[3]

Claims 13 and 27 are nonobvious, as explained above, therefore Claims 4, 6, 7, 9, 10, 12, 14, 16, 29-33 depending on Claim 13 or 27 are patentable under 35 U.S.C. §103(a) and should be allowed.

[3] In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988).

It is believed that the present application is in condition for allowance. A Notice of Allowance is respectfully solicited in this case. Should any questions arise, the Examiner is encouraged to contact the undersigned.

Respectfully submitted,

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